



Decontamination & Decommissioning Products

# from TMI to Fukushima .....

..... and many places in between

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- Since 1981, the Pentek group of companies has supplied the global nuclear industry



Pentek Decontamination Technology, 33 years of service to the nuclear industry.

# US Commercial D&D Projects

Major decontamination and decommissioning works

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- TMI-2 (Pennsylvania)
- Saxton (Pennsylvania)
- Waltz Mill (Pennsylvania)
- Connecticut Yankee (Connecticut)
- Big Rock Point (Michigan)
- Fort St. Vrain (Colorado)
- Yankee Rowe (Massachusetts)
- Maine Yankee (Maine)
- Trojan (Oregon)
- Rancho Seco (California)
- San Onofre Unit 1 (California)
- Humboldt Bay (California)
- Zion (Illinois)



# US DOE & Defense D&D Projects

Pentek equipment is present at 2/3 of all DOE sites

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- Hanford (Washington)
- INEL (Idaho)
- Savannah River (South Carolina)
- Los Alamos NL (New Mexico)
- Lawrence Livermore NL (California)
- Argonne National Lab (Illinois)
- Brook Air Force Base (Texas)
- Knolls Atomic Power Lab (New York)
- Bettis Atomic Lab (Pennsylvania)
- Plum Brook (Ohio)
- Rocky Flats (Colorado)
- Fernald (Ohio)
- Oak Ridge (Tennessee)



# International D&D Projects

Reactors, defense and commercial facilities

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- Sellafield (UK)
- BR-3 (Belgium)
- Latina (Italy)
- ARE Project, LTSF D&D (Malaysia)
- TRR (Taiwan)
- Chalk River (Canada)
- Whiteshell (Canada)
- Al Tuwaitha (Iraq)



# Fukushima-Related Supply

Pentek first visited Japan in October, 2011

- JAEA: standard decontamination system
- IHI: custom vacuum head for integration with specialized forest remediation system
- TEPCO: Unit 3, 5FL decontamination robots





# Fukushima Unit 3, 5FL MOOSE®

First aerial delivery of decontamination capability



Pentek Decontamination Technology, 33 years of service to the nuclear industry.

# Fukushima Unit 3, 5FL MOOSE®

Delivery of 3 independent, remotely operated machines

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# Fukushima Unit 3, 5FL MOOSE®

Delivery included 100% independent utility skids

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For Vacuum MOOSE®



For Scabbling MOOSE®



# Fukushima Unit 3, 5FL MOOSE®

Nov. 2013 deployment of Blade MOOSE® to 5FL



平成25年11月22日

Source: TEPCO  
Nov. 22nd, 2013



平成25年11月22日

Source: TEPCO  
Nov. 22nd, 2013





# Fukushima Unit 3, 5FL MOOSE®

Effective remote decontamination of reactor cover



Composite photograph

Source: TEPCO

# Products for D&D Contractors

Pentek products are for professionals; not consumers

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- 1-step mechanical surface decontamination tools cut and remove contaminated surfaces:
  - Structural concrete and steel surfaces
  - Painted surfaces
  - Sensitive architectural surfaces
- Integrated vacuum collection and packaging
- Weatherproof and decontaminable construction



# Decontamination Tools

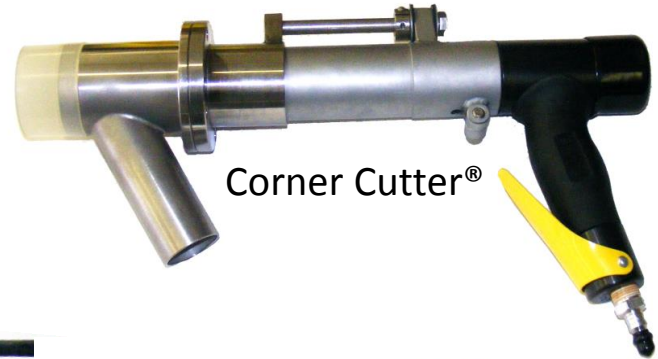
Dustless, effective control of airborne emissions



Roto Peen® Cushioned Abrasive Wheel



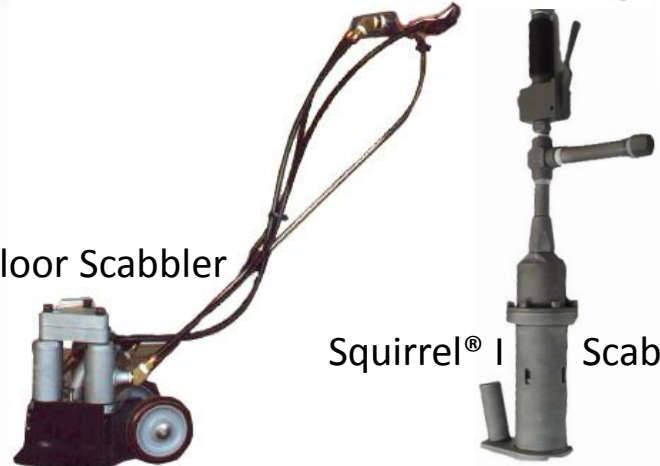
Squirrel® II Crack Chaser



Corner Cutter®



Squirrel® III Floor Scabbler



Squirrel® I Scabbler





# VAC-PAC<sup>®</sup> Collection Systems

HEPA filtered, high flow, low maintenance

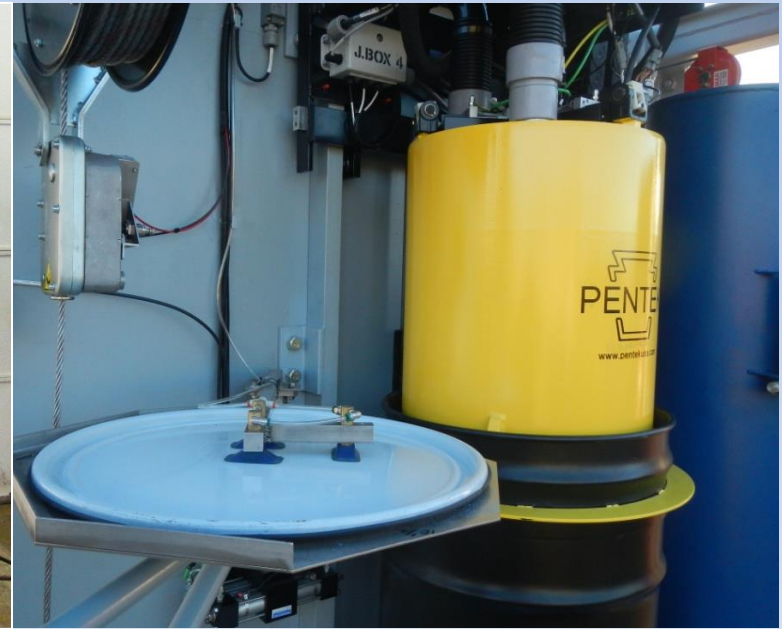
Standard VAC-PAC<sup>®</sup>



Custom VAC-PAC<sup>®</sup>



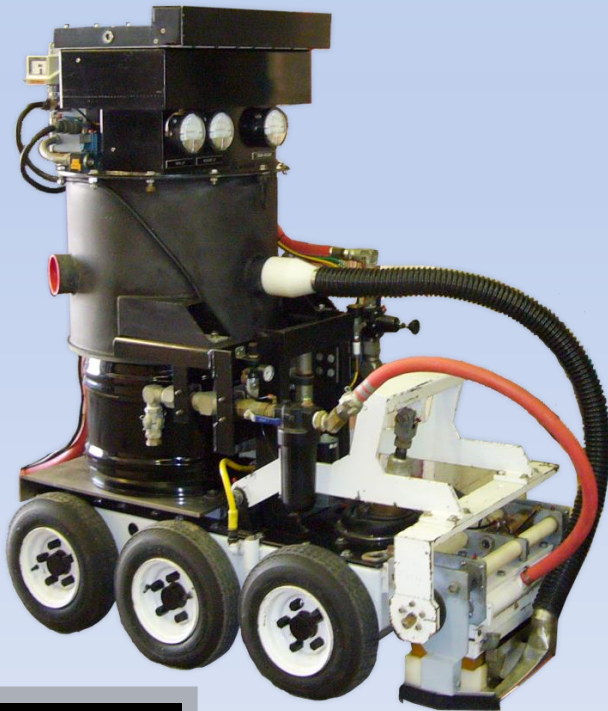
Self-Disposing VAC-PAC<sup>®</sup> Module



# Remote Deployment Schemes

Floors and walls, or new aerial deployment

Standard MOOSE®



WallWalker®



Aerial MOOSE®



# Demolition Equipment

## Modifications for hazardous work locations





# Contact Information

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